

## Essential Skills for Grade 2

Concept	Sub-concept	Standard	Essential Skills
Computing Systems	Devices	2. CS.D.01 Compare and discuss preferences for applications/software with the same primary functionality.	Compare features of similar computer <b>applications</b> .  Justify the choice of a computer application for a given purpose.
Computing Systems	Hardware & Software	2. CS.HS.01 Identify internal and external components of a computer system and their basic functions (e.g., hard drive and memory) as well as peripherals (e.g., printers, scanners, external hard drives) and external storage features and their uses (e.g., cloud storage).	Explain the role of the <b>CPU, memory, and hard drive</b> of computing devices.  Differentiate among the hard drive of a computer, an external hard drive, and <b>cloud storage</b> as appropriate.
Computing Systems	Troubleshooting	2.CS.T.01 Identify and summarize basic troubleshooting techniques to solve basic hardware and software problems (e.g., turning off and on a device to restart, closing and reopening an application/program, turning on speakers).	Identify possible strategies to resolve an issue with a <b>computing device or program</b> .  Implement the strategies identified and determine if the issue has been resolved.
Networks and the Internet	Network Communication & Organization	2. NI.NCO.01 Recognize that by connecting computing devices together they can share information (e.g., printers, scanners, internet, display devices).	Utilize a network to perform specific functions such as printing or sharing documents by sharing information among computing devices.
Networks and the Internet	Cybersecurity	2. NI.C.01 Identify differences between strong and weak passwords and explain the importance of choosing strong passwords to protect devices and information from unauthorized users.	Differentiate between strong and weak passwords and create a strong password.  Explain the importance of strong passwords in protecting privacy, devices, and files.
Networks and the Internet	Cybersecurity	Not addressed at this level.	
Data Analysis	Storage	2. DA.S.01 Create, copy, manipulate, and delete a file on a computing device. Identify the information stored as data	Collect, record, and organize <b>data</b> .  Present a data display and draw a conclusion or make a prediction.

Data Analysis	Collection, Visualization & Transformation	2. DA.CVT.01 With guidance, collect, organize, and present the same data in a variety of visual ways (e.g., bar graph, pie chart, table, etc.)	Create, copy, revise and delete files on a computing device.  Identify various types of information stored on a computer as data.
Data Analysis	Inference & Models	2.DA.IM.01 With guidance, collect, organize, present, and analyze data from a chart or graphical display (visualization) in order to make a prediction, with or without a computing device	Collect and organize data (from an experiment, website, data set, survey, etc.) and display it in three or more ways.
Algorithms and Programming	Algorithms	2. AP.A.01 Model daily processes by creating and following algorithms (step-by-step lists of instructions) to complete tasks verbally, kinesthetically, via a programming language, or using a device.	Create an algorithm by describing or programming the steps to complete a task.
Algorithms and Programming	Variables	2.AP.V.01 Model the way programs store and manipulate grade-level data by using numbers or other symbols to represent information (e.g., encode or decode words using numbers, pictographs or symbols to letters, words, or direction).	Encode or decode messages that use representations such as arrows, pictographs, etc. when given a key.
Algorithms and Programming	Control	2.AP.C.01 Create programs using a programming language, robot device, or unplugged activity that utilize sequencing and repetition to solve a problem or express creative ideas.	Recognize that a <b>computer program</b> is a set of instructions in a specific sequence.  Create a simple computer program, including repeated sequences, to express an idea or solve a problem. Students can be supplied with the commands/code to create the program.
Algorithms and Programming	Modularity	Not addressed at this level	
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Algorithms and Programming	Program Development	2. AP.PD.01 With guidance, create a grade level appropriate document to clarify the steps that will be needed to create a sequential program and can be used to check if the program functionality is correct.	Describe the ordered steps needed to create a <b>computer program</b> in a document.  Explain the desired goals of a program in a document.
Algorithms and Programming	Program Development	2. AP.PD.02 Give attribution to ideas, solutions, and creations of others, verbally and written, while writing and developing programs.	Give written credit to the creator (author, artist, etc.) when using ideas or artifacts of others' when writing a computer program.

Algorithms and Programming	Program Development	2. AP.PD.03 Develop and debug programs that include sequencing and repetition to accomplish a task, through the use of a programming language and/or unplugged activity.	Develop an algorithm for a specific purpose and identify any bugs in the algorithm.  Implement a proposed fix for bugs in an algorithm and determine if the algorithm works as desired.
Algorithms and Programming	Program Development	2. AP.PD.04 Use correct terminology (e.g., debug, program input/output, code, etc.) to explain the development of a program to solve a problem in an unplugged activity, hands-on manipulative, or programming language.	Describe the goals of a <b>computer program</b> .  Explain the steps taken in developing a computer program using correct terminology.
Impacts of Computing	Culture and Diversity	2. IC.C.01 Use grade-level appropriate language to identify and describe how people use a variety of technologies and applications in their daily work and personal lives and the impact of new technologies on daily life.	Compare how technology has changed how specific tasks are accomplished.
Impacts of Computing	Culture and Diversity	Not addressed at this level	
Impacts of Computing	Social Interactions	2. IC.SI.01 Develop a code of conduct and explain responsible practices when participating online. Practice the code of conduct and identify and report inappropriate behavior.	Demonstrate appropriate online behavior and report inappropriate online behavior.  Classify online actions as appropriate or not appropriate based on established code of conduct.
Impacts of Computing	Social Interactions	Not addressed at this level	
Impacts of Computing	Safety, Law & Ethics	2. IC.SLE.01 Keep login information private and log off devices appropriately.	Explain why it is important to keep login information private.  Explain why it is important to log off applications and devices.

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These annotations are a collaboration between [Maryland Center for Computing Education](#) and the [Maryland State Department of Education](#).